

1 **Claims :**

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3 1. A system for manipulating an image on a screen, said system
4 comprising:

5 a touch-sensitive screen for displaying said image;

6 a stylus for indicating a point on said screen by touching said screen;
7 and

8 generating means for generating said image on said screen, said
9 generating means including a dynamic zoom means for carrying out a zoom
10 action on said image on said screen;

11 wherein said zoom means detects a point indicated by said stylus on
12 said screen, and repeatedly performs a zoom action on said image on said
13 screen using said detected point as the center of said zoom action until said
14 stylus is removed from said screen.

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16 2. The system of claim 1, wherein said zoom action comprises an
17 enlargement of said image on said screen about said indicated point.

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19 3. The system of claim 1, wherein said zoom action comprises a reduction
20 of said image on said screen about said indicated point.

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22 4. The system of claim 1, wherein said zoom means continually monitors
23 the position of said stylus on said screen, and wherein, on movement of said
24 stylus across said screen, said zoom means alters the center of said zoom
25 action so that the center of said zoom action follows points on the screen
26 traced by said stylus.

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28 5. The system of claim 1, wherein said image is the graphical form of a
29 mathematical object, and wherein said generating means includes means for
30 generating said graphical form of said mathematical object.

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32 6. A method of manipulating an image on a touch-sensitive screen using a
33 stylus, said method comprising the steps of:

1 displaying said image on said screen;
2 detecting an instruction to perform a zoom action on said image;
3 detecting a point of contact of said stylus on said screen;
4 setting a center of said zoom action at said detected point of contact of
5 said stylus on said screen; and
6 performing said zoom action on said image on said screen using said
7 set center of zoom; and
8 repeating said step of performing said zoom action until it is detected
9 that said stylus has been removed from contact with said screen.

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11 7. The method of claim 6, wherein said zoom action is an enlargement of
12 said image on said screen.

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14 8. The method of claim 6, wherein said zoom action is a reduction of said
15 image on said screen.

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17 9. The method of claim 6, including the step of monitoring the position of
18 said stylus on said screen and changing said center of said zoom action in
19 accordance with movement of said stylus across said screen.

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21 10. The method of claim 6, wherein said image is the graphical form of a
22 mathematical object, and wherein said step of displaying an image on said
23 screen includes the step of generating said graphical form of said mathematical
24 object.

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26 11. Computer software for manipulating an image on a screen using a stylus
27 and a touch-screen, wherein the software includes:

28 a software component for displaying the image on the screen; and
29 a software component for conducting a zoom action on the image on the screen,
30 said zoom action software component detecting a point indicated by the stylus on
31 the screen and repeatedly performing a zoom action on the image on the screen using
32 the detected point as the center

1 of the zoom action until the stylus is determined to have been removed
2 from the screen.

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4 12. A data-processing system for manipulating an image, said system
5 comprising:

6 display means for displaying said image;

7 indicating means for indicating a point on said display means; and

8 generating means for generating an image on said display means, said
9 generating means including a zoom means for conducting a zoom action on
10 said image on said display means;

11 wherein, when said zoom means is activated, said zoom means
12 determines when said indicating means is indicating to a point on said screen,
13 and sets said indicated point as a zoom center; and

14 wherein said zoom means repeatedly carries out said zoom action on
15 said image on said screen about said zoom center until it is detected that said
16 indicating means has stopped indicating to said point.

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18 13. The system of claim 12, wherein said zoom means determines whether
19 said indicating means moves whilst continuing to indicate to a point on said
20 screen, and wherein said zoom means changes said zoom center to track the
21 points indicated by said indicating means during any such movement of said
22 indicating means.

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24 14. A data-processing method for the manipulation of an image on a screen,
25 said method comprising the steps of:

26 displaying said image on said screen;

27 detecting an instruction to perform a zoom action on said image;

28 detecting a point on said screen indicated at by an indicating means;

29 setting a center of said zoom action at said indicated point; and

30 conducting said zoom action on said image on said screen about said
31 set center of zoom; and

32 repeating said step of conducting said zoom action until it is detected
33 that said indicating means no longer indicates to said point.

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2 15. The method of claim 14, including the steps of:
3 determining whether said indicating means moves whilst continuing to
4 indicate to points on said screen; and
5 changing said zoom center to track the points indicated by said
6 indicating means during any such movement of said indicating means.

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